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09/676,000	09/28/2000	CHRISTOPHER E. BARBER	CURL-005	2651

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EXAMINER	
SONG, HOSUK	

ART UNIT	PAPER NUMBER
2135	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Supplemental **Notice of Allowability**	Application No. 09/676,000	Applicant(s) BARBER, CHRISTOPHER E.	
	Examiner Hosuk Song	Art Unit 2135	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *telephone interview on 1/29/2005*.

2. ☒ The allowed claim(s) is/are *8 and 15-17*.

3. ☐ The drawings filed on _____ are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *09676000* .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Hosuk Song

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Mulcahy on 1/29/2005.

AMENDMENTS TO THE SPECIFICATION:

Replace the paragraph appearing on page 6, line 14, through page 7, line 4, with the following paragraph:

Referring now to FIG. 1, the structure of illustrative component 10, constructed in accordance with the principles of the present invention, is described. Component 10 comprises content 12, which may include code or other data, and meta-data 13, which may include a variety of information about component 10. The information included in meta-data 13 should minimally include a unique component identifier and will also typically include a component name. Meta-data 13 may also include a variety of other information, as described in detail herein. Parts of meta-data 13 may be specified by a programmer or content developer during content development, while other parts may be computed and added to meta-data 13 by development tools. For example, a unique ID assigned to a component may be computed by using a secure hash function, as described in [[a]] co-pending, commonly owned U.S. patent ~~application~~ Application No. 09/676,415, filed ~~herewith~~ September 28, 2000, and entitled "~~Method~~ Methods and Apparatus for Generating Unique Identifiers for Software Components."[[.]] Similarly, the time at which component 10 was built or released would be computed and added to meta-data 13 by a build or release tool.

Replace the paragraph appearing on page 13, lines 9-14, with the following paragraph:

As shown, meta-data supplement 20 includes target meta-data element 21 ~~identifies~~ identifying the target component of the meta-data supplement. The value of the target meta-data element is a unique identifier for a component and may be a string, such as a filename or a Universal Resource Locator (URL), or a suitable unique id number. As an example, target meta-data element 21 of FIG. 2[[,]] has a value of "A03EF28719A," corresponding to the value of id meta-data element 22 of component 10. Therefore, component 10 is the target of the meta-data supplement.

Replace the paragraph appearing on page 14, lines 3-10, with the following paragraph:

At 31, a meta-data supplement applicable to the target component being updated is located and retrieved. This may be done by looking for meta-data supplements in specified locations on the local computer or across a network to a component repository. Details of locating components based on its meta-data, e.g., the target-id meta-data, are more fully described in [[the]] commonly owned U.S. patent ~~application~~ Application No. 09/678,178, filed ~~concurrently herewith~~ September 28, 2000, and entitled "CONSTRAINT-BASED LOCATION AND BINDING OF SOFTWARE COMPONENTS," ~~[CURL-003],~~ which is incorporated herein in its entirety.

Replace the paragraphs appearing on page 14, line 19, through page 15, line 9, with the following paragraphs:

After all meta-data supplements have been processed, at 34, they are sorted, at 35, according to their time stamp. This is done so that earlier released meta-data supplements are applied before later meta-data supplements.

Then, the earliest timestamped supplement is applied to the current meta-data, at 36. First, at 37, the meta-data supplement is checked to see if it is authorized to modify the current meta-data. Various schemes may be used to determine whether a meta-data supplement is authorized. In a simple scheme, a meta-data supplement may be authorized if it is signed by a signer that is recognized as being trustworthy, e.g., the signer is on a list of trusted signers. A more complex system may authorize a supplement if there is at least one common signer between the target meta-data and the current meta-data. That is, there are signatures associated with both the current and supplemental meta-data that may be decrypted using the same public key. Clearly, other authorization schemes may also be used with the present invention. Unauthorized supplements are discarded if the target meta-data is not insecurely extendible. Any remaining meta-data supplements are applied to the current meta-data at 38.

Replace the paragraphs appearing on page 17, line 14, through page 18, line 5, with the following paragraphs:

Component signatures in the meta-data component being added are then validated at step 54. As described above, validating a signature requires access to a signing party's public key. If a signing party's public key for a meta-data signature cannot be found, then the corresponding signature should be marked as not validated. A signature that has not been validated may be validated at a later time when a public key is found. However, if a public key is found and the signature fails to be validated then the signature is removed from the meta-

data. Meta-data signatures are validated in an analogous manner, at 55. These steps correspond to step 30 of the flowchart in FIG. 3.

Signatures that have been validated may then be checked against a list of trusted signatories kept by the repository, at 56. Components that are signed by at least one trusted signatory are marked as trusted components, at 57. Alternative schemes may also be used wherein components may be assigned different levels of trust based, for example, on the highest level of trust of any component signatory, or on the number of trusted signatories. Components without any trusted signatories may be removed from the repository, or simply marked as untrusted, depending on the security policy objectives of the repository.

Replace the paragraphs appearing on page 18, line 15, through page 19, line 12, with the following paragraphs:

Then the repository is searched, at 62, to locate target components determined by the target meta-data element of the meta-data supplement. Multiple components may be found, for example, when the repository includes multiple versions of the same component in different delivery formats or with different optimizations. For each component found in the repository, the meta-data is updated as described below.

The cached meta-data for the target component is retrieved, at step [[62]] 63, and its meta-data-mutability attribute checked as in step 30 of FIG. 3, at 64. If the attribute does not allow for changes, then processing of the current component is skipped. Otherwise, at step 65 compatibility of the target meta-data with the current state of the cached meta-data is verified as described with reference to step 33 of FIG. 3. If the supplement is not compatible then no further processing of the meta-data supplement for the current component is required.

At step 66, the supplement is authorized against the component and applied to the cached meta-data as described above with regard to steps 37 and 38 of FIG. 3. In updating overridable meta-data elements, at 67, the value of existing meta-data element having timestamps later then the timestamp of the meta-data supplement are not updated. And, if an overridable element is updated, the timestamp of the overridable element value is set to the timestamp of the meta-data supplement.

Lastly, if any new signatures were added to the cached meta-data by the supplement, the new signatures are validated, at 68, and marked or dropped as described above in connection with FIG. 3. In addition, the component may need to be marked as trusted if any new signatory is on the list of trusted signatories.

AMENDMENTS TO THE CLAIMS:

Claim 8 amend as follows:

A computer-implemented method of updating meta-data associated with a component, wherein the meta-data includes a plurality of meta-data elements, the method comprising:

verifying signatures associated with the component meta-data;

accepting a first meta-data supplement comprising a plurality of meta-data elements;

verifying signatures associated with the first meta-data supplement;

authenticating the first meta-data supplement; and

updating the meta-data elements associated with the component with values of the plurality of meta-data elements associated with the first meta-data supplement;

accepting a second meta-data supplement comprising a second plurality of meta-data elements;

verifying signatures associated with the second meta-data supplement;

authenticating the second meta-data supplement;

sorting the first and second meta-data supplements to provide a sorted plurality of meta-data supplements, each meta-data supplement including a time stamp and sorting the first and second meta-data supplements comprising sorting the meta-data supplements according to the time stamps;

updating the meta-data associated with the component with values of corresponding meta-data elements from the sorted meta-data supplements; and

verifying, by a computer, compatibility between ~~a the~~ meta-data associated with a component and a meta-data supplement by determining that like-named meta-data elements associated with the component and the meta-data supplement have ~~the~~ compatible types and compatible mutability attributes.

Claim 15 amend as follows:

A computer-implemented method for use with digital components, the method comprising:

accepting a digital component, the digital component comprising content and component meta-data;

accepting a first meta-data supplement, the first meta-data supplement comprising first target meta-data and first supplement meta-data;

updating the component meta-data with the first target meta-data;

determining whether the component meta-data is mutable; and

determining whether the target meta-data is compatible with the component meta-data, wherein the component meta-data and target meta-data each comprise a plurality of meta-data elements having an associated name, type, value, and mutability attribute, and wherein

determining whether the target meta-data is compatible with the component meta-data comprises performance of the following by a computer:

selecting a first meta-data element from the target meta-data;

determining whether the component meta-data includes a like-named meta-data element;

determining whether the first meta-data element and the like-named meta-data element have compatible mutability attributes; and

determining whether the first meta-data element and the like-named meta-data element have compatible types.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hosuk Song whose telephone number is 571-272-3857. The examiner can normally be reached on Tue-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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